PREVALENCE OF OCCUPATIONAL MUSCULOSKELETAL DISORDERS IN BARBERS IN ZIRO, LOWER SUBANSIRI, ARUNACHAL PRADESH

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ABSTRACT

Background: Musculoskeletal disorders (MSDs) are common job-related health issues for barbers. This is often due to long hours of standing, repetitive movements, and uncomfortable working positions. These conditions can seriously impact job performance and overall quality of life.

Objective: To examine how often musculoskeletal disorders occur among barbers in Ziro, Lower Subansiri, Arunachal Pradesh. Methods: A descriptive cross-sectional study was carried out among 37 barbers. Data were obtained using a structured interview. The questionnaire focused on socio-demographic information, work-related factors and musculoskeletal symptoms. The data obtained were analyzed by descriptive statistics. Results were summarized in frequency and percentage.

Results: Data indicate that most of the respondents were between 30-39 years old (40.54%) with an average age of 35.7 years. All respondents were male. The majority of the respondents work on average 6 to 10 hours a day (51.35%) with a mean of 19.4 years of working experience. For the past 12 months, 86.48% of the respondents had a musculoskeletal condition in at least one part of the body. The most commonly affected regions of the body were: shoulders (40.50%), wrists/hands (37.80%), upper back (37.80%), lower back (37.80%), Ankles/feet (29.72%), knees (29.72%), neck (18.90%) elbow (16.20%) and Hips/thighs (5.40%). A total of (51.35%) of the respondents indicated that they had been unable to perform their normal jobs due to the problems associated with musculoskeletal condition. In previous 7 days, (48.65%) of the respondents indicated that they had experienced a musculoskeletal symptom. Over half (56.76%) of the respondents consulted a physician due to their musculoskeletal conditions.

Conclusion: A high prevalence of musculoskeletal disorders is found by this study among barbers, thus indicating that this is an occupational health problem. There is a need of ergonomic intervention, awareness programs and preventive measures to address the burden of musculoskeletal disorders experienced by barbers.

Keywords: Musculoskeletal disorders, Barbers, Job related injury, Occupational health, Rates of Musculoskeletal Disorders, Ergonomics.

Introduction:

Work related musculoskeletal disorders (WMSDs) are significant occupational health issue in many countries, affecting upper limbs, lower back, and lower limbs. Work related muscle, tendon, ligament, nerve, bone, and blood circulation impairments are mostly caused in barbers. The world health organization (WHO), recognizing the impact of 'work-related' musculoskeletal disease (WMSDs), has characterize WMSDs as multifactorial indicating that a number of risk factors contribute to and exacerbate these maladies.

Certain job-related activities may have an impact on barbers' ability to work and their health. A researcher found that professional hairdressers spend 29% of their time each year on cutting, 17% on colouring, 10% on blow-drying, and 8% on cleaning hair. Job- related musculoskeletal problems are common among professionals who are subjected to physical labour, work in odd postures, repetitive and static tasks, and poor psychological and social conditions.[1]

Barbers are a rapidly developing profession, particularly in urban India. Barbers is a growing career that is both financially rewarding and a popular choice among young people. Occupational Health concerns for these professions include mechanical pressure on joints, prolonged standing, lengthy working hours, missed meals, lack of breaks, and handling a high volume of customer in a single day.[2]

Barbers are highly susceptible to work-related musculoskeletal disorders (WRMSDs) due to the nature of their work. Common issues include carpal tunnel syndrome and pain in back, neck, and limbs. The risk factors for these disorders are repetitive motions, such as raising arms above shoulder height, frequent bending, and maintaining a fixed posture for extended periods.[3]

The WMSDs are a major cause of morbidity and a big part of the costs of work disability, making up almost 40% of the costs of work-related accidents. Barbers work long hours with limited breaks and use both arms, increasing their risk of lower back, neck, shoulder, arm, wrist and foot problems. Poorly planned workstation and ergonomic equipment can a negative influence on employee health.[4] Despite being the World's second most populous country (1.3 billion), India's hairdressing industry is largely unorganised. Research on work related musculoskeletal problems among hairdressers has been conducted globally, but no estimates are available for India, which has one of the largest workforces in this field.[5]

Ignoring WMSDs can lead to lifelong problems, depending on the worker's age and experience. Preventive steps should be taken to avoid irreversible disabilities. Barbers can prevent MSK concerns by using a properly adjusted client chair, maintaining a normal hand angle, stretching/strengthening routine, and taking short breaks throughout work. The study aimed to identify the prevalence of musculoskeletal disorders among barbers. [6]

Barbering is a risky occupational with a number of intrinsic workplace risk factors. Barbers typically experience a combination of physical, chemical, ergonomic, psychosocial, and biological dangers. Therefore, barbers are frequently vulnerable to numerous work-related illnesses, such as musculoskeletal (WRMSD) disorders. One study revealed an 83.8% prevalence of work-related upper extremity disorders (WUED) in the neck, but study conducted in India found a 45% prevalence, of which 35.69% of all symptoms were related to the neck, 17.44% to the shoulder, 19.62% to the arm and forearm, 16.08% to the wrist, and 11.17% to the

hands.[7]This study aims to assist barbers working individually or in a salon in preventing WMSDs and identifying which body regions (neck, back, shoulder, elbow, arm, hand, hip, knees, feet) are most susceptible to these disorders. This study will investigate the relationship between barber ages and the prevalence of WMSDs.

Need of the study:

1. Individual who are in awkward positions all the time workers like Barbers are more prone to work-related musculoskeletal disorders (WRMSDs).[2]
2. Consequently, a number of researchers discovered that barbers frequently suffer from occupational-related MSD which affects their productivity at work and raises their financial burden.[4]
3. There are limited data on the prevalence of musculoskeletal disorders among barbers in ZIRO, Arunachal Pradesh.

Aim: The aim of the study is to measure the prevalence of musculoskeletal disorders among Barbers in ZIRO, Arunachal Pradesh.

Objectives:

1. To determine the prevalence of work -related musculoskeletal disorders (WRMSDs) among Barbers in ZIRO, Arunachal Pradesh.
2. To identify the most common site of musculoskeletal complaints among the Barbers in ZIRO, Arunachal Pradesh.

Research Question:

1. What is the prevalence of musculoskeletal disorders among Babers in ZIRO?
2. Which body regions are commonly affected by MSDs in Barbers (e.g., neck, shoulder, back, wrists)?

Methodology:

1. Study Designed: Crossed sectional survey-based study.
2. Study setting: Ziro, Lower Subansiri District, Arunachal Pradesh
3. Study Duration: 1 year
4. Sample size: 37
5. Sampling Technique: Simple random technique
6. Method of Data collection:

a. Data has been collected using a printed based questionnaire

b. Standardized Nordic Questionnaires (musculoskeletal assessment tool)

7. Target population: Barbers currently working in Ziro, Arunachal Pradesh.
8. Selection criteria:

A. Inclusion criteria:

a. Male Barbers working in Ziro, Lower Subansiri district.

b. Participants Age 18 and above[3]

c. Barbers with at least 12 months of work experience in the profession.

d. Willing to participate.

B. Exclusion criteria:

a. Individuals with a history of recent trauma, fracture or surgery affecting the musculoskeletal system within the last 1 to 3 months.

b. Barbers with known neurological or systemic disorders (e.g., rheumatoid arthritis, stroke).

c. Those unavailable or unwilling to participate in the survey.

9. Materials used:

1. Printed based questionnaires
2. Pen
3. Paper
4. Pencil

Measuring Tool:

1. Standardized Nordic questionnaires (musculoskeletal assessment tool)

Data collection procedure

Prior to data collection, ethical approval was obtained from the Institutional. Participants were approached during the least busy hours to minimize any disturbances with their duties. Each participant received an information sheet about the study's objectives, risk and benefits of participation, right to withdraw at any time, confidentiality assurance. The written informed consent was obtained from every participant before data collection started. Data was primarily collected through face-to-face interviews and filling up the questionnaire form for clarity and completeness. Completed forms were securely collected immediately after completion. The data were presented as measures of frequency and percentage of the variables with graphs. The results were analyzed using Microsoft Office Excel.

Result

In this study all, 37 barbers took part in the research. The age group of 30-39 old had the largest percentage of participants (40.54%), followed by 20-29 years old (27.03%) and 40-49 years old 24.32%. The age groups of 50-59 (5.41%) and 60-69 (2.70%) accounted for a lesser percentage. The average age of the individuals involved was 35.7 years. Every single participant was male (100%).

Table 1. Age Distribution

Age Group (Years)	Frequency (n=37)	Percentage (%)
20-29	10	27.03%
30-39	15	40.54%
40-49	9	24.32%
50-59	2	5.41%
60-69	1	2.70%
Mean Age = ± 35.7		

In terms of physical attributes, the majority of participants (43.24%) were between the heights of 151 and 160cm and 161-170cm. just 2.70% fell between 181 and 190cm, and a smaller percentage (10.81%) fell between 171 and 180cm. 162.8 cm was the mean height. The majority (40.55%) weight between 51 and 60 kg, followed by 61 to 70 kg (27.01%), 41 to 50 kg (24.32%), and 71 to 80 kg (8.11%). 59 kg was the mean weight. 18.92% of participants were single, whereas the majority (81.08%) were married.

Table 2. Year of working

Year of working (Years)	Frequency (n=37)	Percentage (%)
01-10	9	24.32
11-20	14	37.84
21-30	10	27.03
31-40	4	10.81
Mean Year of working = ±19.4 years		

Regarding work-related characteristics, 37.84% of participants had worked for 11-20 years, 27.03% for 21-30 years, and 24.32% for 1-10 years. Merely 10.81% possessed 31-40 years of expertise. 19.4 years was the average length of employment of the participants,51.35 percent worked 6-10 hours a day, and 37.84 percent worked 11-15 hours. Only 5.41% of workers put in 0-5 hours or 16-20 hours a day. 9.9 hours a day was the average amount of time spent working. None of the individuals involved worked a part-time job.

Table. 3. Trouble with locomotive organs in last 12 months

Distribution of trouble in different locomotive organs in last 12 months		
Trouble in different locomotive organs	Frequency (n=37)	Percentage (%)
Neck	7	18.90%
Shoulders	15	40.50%
Elbow	6	16.20%
Wrists/Hands	14	37.80%
Hips/Thighs	2	5.40%
Upper Back	14	37.80%

Low Back	14	37.80%
Knees	11	29.72%
Ankles/Feet	11	29.72%

Table 4. Distribution of barber that had trouble in at least one locomotive organ during the last 12 months

Trouble in at least one locomotive organ in last 12 month	Frequency (n=37)	Percentage (%)
Yes	32	86.48%
No	5	13.51%

Table 5. Distribution of Barbers prevented from doing normal work because of the trouble at any time during the last 12 months

Percentage of Barber prevented from doing normal work due to the trouble during the last 12 month		
Locomotive organs	Frequency (n=37)	Percentage (%)
Neck	6	16.21
Shoulders	9	24.32
Elbow	5	13.51
Wrists/Hands	9	24.32
Hips/Thighs	2	5.41
Upper Back	10	27.03
Low Back	9	24.32
Knees	7	18.92
Ankles/Feet	8	21.62

According to my study, musculoskeletal issues are very common among barbers in Ziro, Lower Subansiri District, Arunachal Pradesh, shoulder (40.50%) was the most frequently affected body part, followed by the hands and wrists (37.50%), upper back (37.80%), and lower back (37.80%). Knee and ankle/foot difficulties were reported by 29.72% each, while neck and elbow problems were reported by 18.90% and 16.20%, respectively. The least affected areas were the thighs and hips (5.40%). In total, 86.48% of participants said they had trouble with at least one body part in the previous 12 months. Over 50% of the study population (51.35) indicated that they were restricted from doing work by musculoskeletal problems in the last 12 months. Upper back problems (27.03) were the major musculoskeletal cause for restriction of work, followed by shoulder, wrist/hand and lower back problems (24.32% each). Knee, ankle/foot, neck and elbow problems accounted for work restriction as well (18.92%, 16.21 and 13.51% respectively.

Within the last 7 days, 48.65% of participants experienced some sort of musculoskeletal discomfort in at least one body region. The reported sites included the upper back (24.32%), knees (24.32%), shoulders (18.92%), lower back (21.62%) and wrist/hands (18.92%) other sites included neck (13.51%), elbow (8.11%). And ankle/foot (16.22%). For injury due to accidents, 29.73% of participants reported injury in at least one body region, while 70.27% reported no injury, The most frequently reported places of injury were the shoulders, knees, and ankles/feet (8.11%, respectively) followed by the neck and lower back (5.41%). More than half of the participants (56.76%) visited a doctor for musculoskeletal related problems in the last 12 months. Low

back and knee problems (27.01) were the more prevalent reasons for visit to a general practitioner followed by shoulder and ankle foot problems (24.32%).

Table 6. Distribution of Trouble during the last 7 days

Trouble during the last 7 days		
Locomotive organs	Frequency (n=37)	Percentage (%)
Neck	5	13.51
Shoulders	7	18.92
Elbow	3	8.11
Wrists/Hands	7	18.92
Hips/Thighs	0	0
Upper Back	9	24.32
Low Back	8	21.62
Knees	9	24.32
Ankles/Feet	6	16.22

Discussion

The present study was conducted to assess prevalence of occupational musculoskeletal disorders among barbers in Ziro, Lower Subansiri, Arunachal Pradesh and with 86.48% of individuals experiencing difficulty in at least one locomotor organ within the previous 12 months, the most affected reasons were shoulder (40.5%), wrists/hands (37.8%), upper back 37.8%, and low back (37.8%) the results showed a significant incidence of musculoskeletal issues. These findings indicate that barbers are highly vulnerable to WMSDs due to repetitive movements, prolonged standing, awkward posture and long working hours. The current study's findings are comparable to those of Ramandeep Kaur Saini et al.1 (2022) prevalence of musculoskeletal disorders among hairdressers in Urban Setup in Mumbai, India, which found that lower back pain (81%), and shoulder pain (53%), were the most common musculoskeletal complaints among hairdressers. The similarities between both investigations could be attributed to extended standing posture and repetitive upper limb motions during hair cutting and grooming.[8]

The current study found that 48.65% of individuals had musculoskeletal difficulties within the previous 7 days, with the upper back and knee being the most common areas. Similarly, Anmar Zaheer study found a significant prevalence of symptoms in the recent 7 days, notably in the lower (54.5%) and neck (48.5%), showing that these illnesses are chronic and recurring in both groups.[9]

Furthermore, 48.65% of participants experienced musculoskeletal pain in at least one body region throughout the prior 7 days, indicating that these symptoms are persistent and continuous. The upper back and knees (24.32%) were the most commonly affected areas during this period, followed but the lower back (21.62%). In the previous year, 56.76% of participants sought medical attention for musculoskeletal issues. The most common reason for seeking medical attention were low back pain and knee pain (27.01%), emphasizing the gravity of these diseases. The distribution of musculoskeletal issues among various body parts offers crucial information about the type of risks associated with barbering. The most impacted area in this study was the shoulder (40%), which was followed by the wrists/hands, upper back, and lower back (each37.8%). The

particular duties that barbers conduct can account for these findings. Shoulder tension results from repetitive arm elevation during tasks like shaving, and hair cutting. Repetitive hand and wrist motions brought on by constant use of scissors and clippers raise the possibility of strain and damage. In a similar vein, bending and leaning forward while working might cause lower and upper back pain.

The study found that 48.65%, of individuals suffered musculoskeletal pain in the previous 7 days. The suggests that these conditions are not just chronic, but also persistent and recurring. During this period, the upper back and knees were most typically affected, followed by the lower back. The persistence of symptoms indicates insufficient healing and ongoing exposure to risk factors.

The persistence of symptoms emphasizes the chronic character of musculoskeletal disorders. Many individuals reported pain lasting 1-7 days, but some experienced symptoms for longer periods or even daily discomfort in specific body locations. Chronic exposure to such situations can result in long-term disability if not managed effectively.

Overall, the findings of our study imply that musculoskeletal diseases among barbers in Ziro, Lower Subansiri, Arunachal Pradesh, have multiple causes and the importance factors are: prolonged standing, repetitive movements, awkward postures, long working hours, lack of ergonomic awareness.

Conclusion:

The present study revealed a high prevalence of musculoskeletal disorders among barbers in Ziro, Lower Subansiri, Arunachal Pradesh, indicating a significant occupational health concern. Most participants reported discomfort in at least one body region during the past 12 months, with the shoulders, wrists/hands, upper back, and lower back being the most commonly affected areas. These findings may be associated with repetitive hand movements, prolonged standing, and awkward working postures during barbering activities.A considerable number of participants also reported difficulty performing routine work activities due to musculoskeletal problems, while many experienced symptoms within the last seven days, suggesting the persistent nature of these conditions. More than half of the participants sought medical consultation for their symptoms, reflecting the impact of these disorders on their daily life and occupational performance.Overall, the study highlights the need for ergonomic modifications, awareness regarding proper working posture, and early preventive interventions to reduce the burden of musculoskeletal disorders among barbers.

Limitation:

1. Because the study was crossed-sectional, it is unable to determine cause and effect relationships and only displays the prevalence of musculoskeletal disorders as a single point in time.
2. No inferential tests were utilised to identify correlations between variables only descriptive statistics (frequency and percentage) were utilised.

Future Recommendation:

1. Because the study was crossed-sectional, it is unable to determine cause and effect relationships and only displays the prevalence of musculoskeletal disorders as a single point in time.
2. No inferential tests were utilised to identify correlations between variables only descriptive statistics (frequency and percentage) were utilised.

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